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(71) Applicant: Aproalia S.L.
15165 Bergondo La Coruña (ES)

(72) Inventors:

- Puente Varela, Ramón Fernando 15160 Sada, La Coruña (ES)
- Fernandez Pazos, José Luis 2788 Burelo, Lugo (ES)
- (74) Representative: Carvajal y Urquijo, Isabel et al Clarke, Modet & Co.
   Goya 11
   28001 Madrid (ES)

### (54) Combined refrigeration and air conditioning system

(57) The invention relates to a combined refrigeration and air conditioning system, which simultaneously carries out the functions of an industrial cold and air conditioning system of an installation or premises by means of refrigeration cycles by direct expansion of a refrigerant.

To that end, it comprises two or more compressors (10,20) sending the compressed refrigerant to a common

point, a series of expansion valves (12, 22) and several heat exchangers (11, 13, 23), two of which carry out the exchange with the medium to be cooled with the industrial cold system and with the premises or installation to be air conditioned.

The operation mode of the air conditioning system is easily changed from heating to refrigeration by means of the action of two series of valves (50, 51).

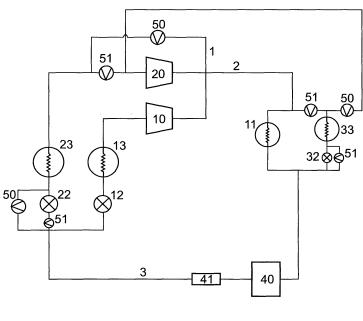


FIG. 3

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## **EUROPEAN SEARCH REPORT**

Application Number EP 07 38 0048

	DOCUMENTS CONSID	ERED TO BE RELEVANT		
Category		ndication, where appropriate,	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
(	AL) 17 June 2004 (2	- paragraph [0130];	1-3,5-9	INV. F25B41/00 F25B41/04
(	figures 1-10 * * paragraph [0035] * paragraph [0051]	005-01-19) - paragraph [0078]; *	1-4,8	
(	GB 2 241 317 A (TOS 28 August 1991 (199 * page 4, line 8 - figures 1-4 *	1-08-28)	1-3	
X	23 August 1995 (199	NYO ELECTRIC CO [JP]) 95-08-23) 2 - column 14, line 15;	1-3	TECHNICAL FIELDS SEARCHED (IPC)
X	GB 2 248 494 A (HII 8 April 1992 (1992- * page 6, last para paragraph; figures	·04-08) igraph - page 28, last	1-3	
<u> </u>	The present search report has	been drawn up for all claims		
	Place of search	Date of completion of the search		Examiner
	Munich	12 November 2009	Szi	lagyi, Barnabas
X : parti Y : parti docu A : tech O : non-	ATEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with anot ment of the same category nological background written disclosure mediate document	L : document cited fo	oument, but publise n the application or other reasons	shed on, or

EPO FORM 1503 03.82 (P04C01)

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#### ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 07 38 0048

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-11-2009

Patent document cited in search report			Publication date	Patent family member(s)		Publication date	
US	2004112082	A1	17-06-2004	AU CA CN EP WO TW	2003211883 2440384 1511243 1469260 03062718 263025	A1 A A1 A1	01-09-200 31-07-200 07-07-200 20-10-200 31-07-200 01-10-200
EP	1498668	A1	19-01-2005	AU CN WO JP US	2003220985 1643311 03087681 3575484 2005150243	A A1 B2	27-10-200 20-07-200 23-10-200 13-10-200 14-07-200
GB	2241317	Α	28-08-1991	JP US	3236570 5150582		22-10-199 29-09-199
EP	0668474	A2	23-08-1995	CN DE DE ES JP US	1114406 69520701 69520701 2158000 7234038 5467604	D1 T2 T3 A	03-01-199 23-05-200 15-11-200 01-09-200 05-09-199 21-11-199
GB	2248494	Α	08-04-1992	JP JP US	2839343 4093561 5279131	Α	16-12-199 26-03-199 18-01-199

FORM P0459

 $\stackrel{\circ}{\mathbb{L}}$  For more details about this annex : see Official Journal of the European Patent Office, No. 12/82